King County
Department of Natural Resources and Parks
Water and Land Resources Division
Noxious Weed Control Program
206-296-0290 TTY Relay: 711

BEST MANAGEMENT PRACTICES
Tansy Ragwort - *Senecio jacobaea*
Asteraceae

Class B Noxious Weed

Description

- Toxic. Poses a serious threat to livestock (see Impacts on page 4).
- Tap-rooted biennial or short-lived perennial with 2 to 4 foot tall erect stems, branched near the top, with clusters of bright yellow daisy-like flower heads.
- Each flower head has 10 to 15 ray flowers (petal-like flowers) surrounding yellow disk flowers and the flower clusters grow near the top of the stem.
- First year plants are dense rosettes with dark green ruffled or lobed leaves on purplish stems.

Habitat

- Typically found in full sun or partial shade in pastures, on roadsides and horse trails, in forest clear-cuts and on vacant lands.
- Also common on cleared forestlands, adjacent roadsides and fields and in unmaintained areas in new developments in King County.

Reproduction

- Reproduces by seed. Plants that go to seed die at the end of the season.
- **Plants can flower from June to October** but typically start to **form seeds by mid August**.
- Seeds are borne a short distance by wind and longer distances by animals, in hay and on equipment and vehicles. Large plants may produce as many as 150,000 seeds.
- Seeds can be viable for as long as 15 years. Seeds in the upper 2 cm of soil generally are viable for 4 to 5 years. Below 2 cm, the seeds remain dormant longer. Tilling, grazing or other disturbance will cause these dormant seeds to germinate.

Control Methods

The preferred method of control is Integrated Pest Management (IPM). IPM involves selecting from a range of possible control methods to match the management requirements of each specific site. The goal is to maximize effective control and to minimize negative environmental, economic and social impacts.

Control methods should be multifaceted and adaptive, developed to reflect the available time, funding, and labor of the participants, the land use goals, and the values of the community and landowners. Management will require dedication over a number of years, and should allow for flexibility in method as appropriate.

Management Plan

- Small infestations are easily hand-pulled or dug up. Isolated plants should be carefully removed in order to stop them from infesting a larger area.
- For larger infestations, the strategy will depend on the land use of the site. In pastures, good grazing practices and management of grass and forage species will greatly improve control of tansy ragwort. Specific suggestions are given in the pasture section below.

- For control of large infestations on roadsides and other non-pasture areas, herbicide use may be necessary. For tansy ragwort, it is most effective to apply selective broadleaf herbicides in the spring and again in the fall. Infested areas should not be mowed until after the herbicide has had a chance to work.
- If a non-selective herbicide (such as glyphosate) is used, combine with effective re-vegetation of the site to prevent tansy ragwort seedlings from re-infesting the area.
- For several years following treatment, monitor areas for new plants from the seed bank.

Early Detection and Prevention

- Tansy ragwort is easy to find once it flowers. Monitor pastures, areas used by livestock, horse trails and roadsides for new populations of tansy ragwort in **June and July**.
- Pull up isolated or small populations. If there are many rosettes, it may be necessary to treat the area with an appropriate herbicide in the early fall or the following spring.
- Prevent plants from spreading from existing populations by washing vehicles, boots and animals that have been in infested areas.
- If animals are being moved from an infested pasture to an uninfested pasture, first hold them for at least five days so that the seeds pass out of the animals' digestive system.

Manual

- **Pull the plants after they bolt but before they flower**. Typically this is from May to June.
- Plants in flower can form viable seeds even after they are pulled so carefully bag and dispose of all flowering plants, especially later in the season when seeds are beginning to form.
- If the plants are in seed, it is very difficult to bag the seed heads without dispersing the seeds.
- In areas where mature plants are pulled, there are usually many small rosettes and seeds left in the soil. Carefully search the area for rosettes and dig them up. Roots break off easily and re-sprout with young plants, so use a digging tool.
- Return to the same location in the following spring and summer to remove plants coming up from seeds already in the soil and continue to monitor the area for several years.

Mechanical

- Mowing will **not** control tansy ragwort effectively. Plants are able to re-sprout and flower again in the same season when mowed. Plants that are regularly mowed can persist as short-lived perennials or can flower below the level of the mower.
- Mowing may increase the amount of toxin ingested by the animals because grazing animals are often unable to avoid eating small tansy ragwort plants growing among pasture grasses.

Biological

- Biological control can take up to six years to have a significant impact on the infestation. Population density and the number of flowering plants can be reduced but there will always be some plants remaining with this method.
- The ragwort flea beetle (*Longitarsus jacobaeae*) larvae mine the roots of the rosettes and kill plants in the spring when they start to bolt. Heavy feeding by adult flea beetles on the leaves can kill rosettes in the fall and winter. Flea beetles are most effective in sunny pastures that don't get flooded and are below 2400 feet in elevation.
- The cinnabar moth (*Tyria jacobaeae*) does best in sunny, warm areas at elevations less than 3000 feet where the tansy ragwort densities are greater than 4 per 10 sq. ft. ($4/m^2$). It does not do well on the coast and in shady areas under trees or where the plant density is below 1 plant per 20 sq. ft.
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Biological continued

- The most effective biological control method is to **release the ragwort flea beetle and the cinnabar moth together**.

Chemical

- Chemical control options may differ for private, commercial and government agency users. Follow all label directions. Herbicides should only be applied at the rates and for the site conditions / land usage specified on the label.
- **Certain herbicides can not be used in aquatic areas or their buffers**. If herbicides are used, make sure that their use is allowed at your site. Contact your local noxious weed control program for control guidelines in your area.
- Several herbicides are recommended by the PNW Weed Control Handbook for tansy ragwort control. For site specific herbicide recommendations, please contact the King County Noxious Weed Control Program.
- The addition of a suitable surfactant to the herbicide may improve the control results.
- Non-selective herbicides are effective but may damage grass and other vegetation. Treatment with a non-selective herbicide needs to be followed by re-seeding with grass. Without re-seeding, bare areas will be re-infested from the seed bank and by any missed plants.
- Selective herbicides that target only broadleaf plants may be used in grassy areas.

Control in Pastures

- The best defense against tansy ragwort in a pasture is a healthy, dense stand of perennial grasses and clover. Maintain a healthy pasture by appropriate use of seeding and fertilizer. Use a mix of grass and clover species to improve resistance to tansy ragwort. Fertilize according to the soil needs.
- Grazing should be managed to promote grass and clover vigor. Graze uniformly and move animals from area to area in a planned sequence. Avoid grazing when soil is very wet because holes can be opened up to new weed infestations. Some winter grazing by smaller animals can stimulate growth of clover and improve grass health.
- Be sure to monitor for tansy ragwort on edges of pastures and disturbed areas around fences and watering holes. Remove isolated plants before they go to flower.
- In fields densely infested with tansy ragwort, remove all cattle and horses until the tansy ragwort is reduced to isolated plants.
- **The following recommendations are only for noxious weed control in areas where herbicides can legally be used**.
- Suppression of large infestations of tansy ragwort with a selective herbicide will greatly increase grass production, which in turn increases the suppression of the tansy ragwort. Apply herbicide on a warm, sunny day when no rain is expected for at least 6 hours.
- Follow herbicide label instructions for grazing restrictions and re-seeding instructions. Selective herbicides can reduce the amount of clover in pastures, so it may be necessary to re-seed following a broadcast application. For patchy infestations, it is better to spot-spray the tansy ragwort to avoid harming the clover.
- If needed, apply a nitrogen fertilizer after the selective herbicide application and then manage grazing so that 4 to 6 inches of grass re-growth remains at the end of the growing season so that grasses can effectively resist re-invasion by the tansy ragwort.

Additional Information

Legal Status in King County: **Class B, County-Select** (non-native species designated for control by the King County Noxious Weed Control Board). **The King County Noxious Weed Control Board requires property owners to control tansy ragwort on private and public lands throughout the county.**

Impacts and History

- Serious threat to livestock. Contains pyrrolizidine alkaloids that are converted to toxic pyrroles in the liver after ingestion. The damage to the liver is irreversible and cumulative and will usually kill the affected animal.
- The most toxic part is the leaves, which are ingested while the animal forages for grasses and other desirable plants near the tansy ragwort.
- Dried leaves maintain their toxicity but not the bitter taste, and when mixed with hay or other silage it is not possible for the animal to detect or avoid the tansy ragwort.
- Cattle and horses are most vulnerable to poisoning but it is also toxic to deer, pigs and goats.
- First reported in North America in 1913 in British Columbia, reported in Portland, Oregon in 1922 and by the 1950's, had become a serious economic problem west of the Cascades.

Local Distribution

The heaviest concentrations of tansy ragwort are in south and central King County in the areas surrounding Auburn, Enumclaw, Maple Valley and Covington. There are also significant infestations on Vashon Island, in the Woodinville and Kenmore areas, and other rural areas of the county. Although there is a connection between grazing areas and tansy ragwort infestations, tansy ragwort is also found on vacant properties that were logged or cleared for development and along city, county and state roads.

References

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